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November 2021

# **Los Alamos National Laboratory Floodplain Assessment for the High Explosive Transfer Facility Blast Radius Fence Project at Technical Area 08**

Prepared by: Environmental Protection and Compliance Division,  
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Prepared for: U.S. Department of Energy  
National Nuclear Security Administration  
Los Alamos Field Office

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## **ACRONYMS**

CFR	Code of Federal Regulations
DOE	U.S. Department of Energy
HE	High Explosive
LANL	Los Alamos National Laboratory
ft.	feet
NNSA	National Nuclear Security Administration
TA	Technical Area
yr.	year

## INTRODUCTION

The National Nuclear Security Administration (NNSA), a semi-autonomous agency within the U.S. Department of Energy (DOE), is proposing to take action at Los Alamos National Laboratory (LANL) within the upper Pajarito Canyon 100-year (yr.) floodplain at Technical Area (TA) 08. This action consists of installation of a 3-strand smooth wire fence to create an operational boundary in a radius of 1250 feet (ft.) from the TA-08 High Explosive (HE) Transfer Facility (Figure 1). The proposed fence is intended to provide a barrier between the public and direct access to the HE Transfer Facility.

NNSA has prepared this floodplain assessment in accordance with 10 Code of Federal Regulations (CFR) Part 1022 *Compliance with Floodplain and Wetland Environmental Review Requirements* (10 CFR Part 1022) (CFR 2003) which was promulgated to implement DOE requirements under Executive Order 11988 *Floodplain Management* (EO 1977). A floodplain is defined in 10 CFR 1022 as “the lowlands adjoining inland and coastal waters and relatively flat areas and flood prone areas of offshore islands,” and a base floodplain as “the 100-year floodplain, that is, a floodplain with a 1.0 percent chance of flooding in any given year (CFR 2003).” This floodplain assessment evaluates potential impacts to floodplain values and functions from implementation of the proposed action, identifies alternatives to the Proposed Action, and allows for meaningful public comment.

DOE/NNSA has published this Floodplain Assessment for a 15 day public review and comment period. Please provide comments on this Floodplain Assessment to Kristen Dors at:

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or

**Mail:** U.S. Department of Energy  
Los Alamos Field Office  
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Los Alamos, NM 87544

After the close of the comment period and prior to issuing a floodplain Statment of Findings, DOE/NNSA will reevaluate the practicability of alternatives to the proposed floodplain action, mitigating measures and take into account all substantive comments received during the public comment period. DOE/NNSA will endeavor to allow 15 days of public review prior to implementing the proposed action.





**Figure 1. Map of the proposed blast radius fence line for the TA-08 HE Transfer Facility showing Pajarito Canyon 100-yr floodplain.**

## **BACKGROUND**

The upper Pajarito Canyon 100-yr floodplain runs roughly west to east along the northern boundary of TA-08 (Figure 1). There are no storm water management controls in upper Pajarito Canyon other than culverts under West Jemez Road/New Mexico Route 501 and secondary road crossings within LANL (not shown on map).

The proposed fence would cross the floodplain in an area dominated by ponderosa pine and mixed conifer forest (Figures 2, 3, 4, and 5). The canyon bottom is undeveloped with no defined riparian corridor or wetlands present. Although a stream channel runs through the canyon, water flow is intermittent.

The proposed fence is intended to create an operational boundary to provide a barrier between the public and direct access to the HE Transfer Facility. The proposed location, a radius of 1250 ft. from the HE Transfer Facility, is based on safety requirements for facilities that handle high explosive materials.

## **PROJECT DESCRIPTION**

The proposed 3-strand smooth wire fencing would be installed from a former spur of Anchor Ranch Road to the existing chain link fence north of X-Ray Road. Warning signs would be posted on the fence. The fence would be installed in a radius of 1250 ft. minimum distance from the TA-08 HE Transfer Facility.

Fence materials (e.g., t-posts, wire, etc.) would be transported to the area outside the floodplain by wheeled all-terrain vehicles. Existing two-track roads and trails would be utilized wherever possible. Materials would be transported into the floodplain by hand. T-posts would be installed by hand with a fence post driver. LANL civil engineering standards require that T-post type metal fence posts would be driven into the ground at intervals of no more than 16 ft. and to a depth of no less than 36 in. The Project estimates the posts would be set at approximately 10 ft. intervals. The 100-yr floodplain is approximately 60 ft. wide at the location where the fence crosses the floodplain. Therefore, there should be no more than 5-6 posts installed in the floodplain. Posts would be installed outside of the stream channel.

The proposed fencing would be located to limit the amount of disturbance to existing trees and shrubs. Vegetation would not be removed within the floodplain for this project.

Installation of fencing within the floodplain should take approximately one week.





**Figure 2. Location of proposed fence line across Pajarito Canyon 100-yr floodplain looking north from stream channel.**



**Figure 3. Location of proposed fence line across Pajarito Canyon 100-yr floodplain looking south from stream channel.**





**Figure 4. Location of proposed fence line across Pajarito Canyon 100-yr floodplain looking east down channel.**



**Figure 5. Location of proposed fence line across Pajarito Canyon 100-yr floodplain looking west up channel.**

## **FLOODPLAIN IMPACTS**

The proposed project would involve work within the 100-yr floodplain. The following floodplain impact assessment discusses the long- and short-term impacts (positive, negative, direct, and indirect) of the proposed project on the floodplain.

### **Short-term Impacts**

Short-term direct impacts to the floodplain from this project include temporary ground disturbance associated with the installation of fence posts and wire fencing. Fence posts in the floodplain are hand driven which would not require soil disturbance (e.g., excavation). Vegetation would not be removed within the floodplain area.

LANL maintains a Permits and Requirements Identification process for LANL subject matter experts to identify, evaluate and resolve project-specific issues such as presence of underground utilities, contaminated soils, spills and leaks, soil disturbance and stabilization, threatened and endangered species habitat, floodplains or wetlands, and regulatory agency authorizations such as US Army Corp of Engineers permit requirements and Clean Water Act permit requirements. The process aids in identifying potential impacts to the natural and beneficial floodplain values and potential effects on lives and property.

- This project would require National Pollutant Discharge Elimination System Construction General Permit coverage. This permit requires controls to limit soil erosion, sediment loss, and spills and leaks during and after construction. Controls may include temporary perimeter controls to reduce sediment transport during construction and final stabilization to control erosion.
- Proposed activities in the floodplain would not significantly alter the current hydrology. This project would not be required to meet Energy Independence and Security Act compliance in the area of the floodplain.
- The project would not disturb any threatened or endangered species habitat.
- No historical or archeological sites are located in this area of the floodplain but have been located in other areas of this project. LANL archeological staff would monitor ground-disturbing activities as needed.
- There would be no soil-disturbing activities in the watercourse; therefore, this project would not require Clean Water Act Section 404 permit coverage or 401 certification.
- The project would not impact any solid waste management units or areas of concern.

Potential short-term direct and indirect floodplain impacts from the release of pollutants to the floodplain and exposure to stormwater would be avoided or minimized through implementation of the following best management practices:

- Hazardous materials, chemicals, fuels, and oils would not be stored within the floodplain.



- Work in a floodplain would not take place when the soil is too wet to adequately support equipment.
- Equipment would be refueled at least 100 ft. from any drainage, including dry arroyos.

Potential direct effects to migratory birds and other biological resources would include short-term disturbance related to noise and human presence during construction. Adult migratory birds would give way to construction equipment to avoid being killed or injured. The Migratory Bird Treaty Act prohibits killing migratory birds, including nestlings and eggs in an active nest. Therefore, if vegetation removal were required, it would be coordinated to occur outside of the nesting season for migratory birds (May 15 through July 31). If construction activities occur during the nesting season, an onsite inspection for bird nests from LANL Biological Resource subject matter experts would be required. Construction activities would conform to requirements stipulated in the Migratory Bird Best Management Practices Source Document for Los Alamos National Laboratory (LANL 2020).

### **Long-term Impacts**

No long-term impacts to the floodplain are anticipated from the installation of 3-strand wire fencing across the Pajarito Canyon 100-yr floodplain. Flow paths within the floodplain would not be significantly modified by construction from pre-project conditions to post project conditions.

This assessment also considered the impacts of the proposed actions in the floodplain on the conservation of habitat for existing flora and fauna, aesthetic values, and public interest. The proposed action would not remove any protected habitat or disturb soil. The proposed action would not impact aesthetic values since all construction activities are internal to LANL and the public would not see the fence unless they deviate from established hiking/biking trails. No impacts to lives or private property associated with floodplain disturbance are anticipated.

## **ALTERNATIVES**

The alternatives available to DOE/NNSA include: (1) no action alternative, and (2) a chain link security fence alternative. The no action alternative was not selected by DOE/NNSA because the potential for a public safety issue would persist if an operational barrier were not installed. The chain link fence alternative was not selected by DOE/NNSA because chain link would trap debris causing eventual damage to the fence, alteration of stream flow, and floodplain deterioration.

## **CONCLUSIONS**

Although the proposed project may result in limited and minor short term, direct and indirect impacts to the 100-yr floodplain, it would not result in adverse impacts to the floodplain values or functions. Temporary disturbance within the floodplain would cease following completion of construction activities. Best management practices would be implemented. This proposed project would not significantly modify flow paths within the floodplain from pre-project conditions to

post project conditions. No effects to lives and property associated with floodplain modifications are anticipated.

In accordance with 10 CFR 1022 and based upon the information presented in this floodplain assessment, DOE/NNSA concludes that this proposed project conforms to applicable floodplain protection standards and the appropriate steps have been taken to minimize potential harm within the floodplain. Upon publication of this assessment, DOE/NNSA will initiate a 15-day public review period prior to implementing the proposed project. A Statement of Findings will be posted online and available for public review.

## **LITERATURE CITED**

**EO 1977.** Executive Order 11988 *Floodplain Management*

**CFR 2003.** 10 Code of Federal Regulations (CFR) Part 1022 *Compliance with Floodplain and Wetland Environmental Review Requirements*

**LANL 2020.** *Migratory bird best management practices source document for Los Alamos National Laboratory revised November 2020.* Stanek, J.E., Thompson, B.E., Sanchez, A.A., Berryhill, J.T. and C.D. Hathcock, LA-UR-20-24292.